C10CH Series Camera

Color, Ultra High Resolution

C2946M-E (1/09)

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WARNING:
TO PREVENT RISK OF FIRE OR SHOCK, DO NOT EXPOSE THIS CAMERA TO RAIN OR MOISTURE.

PRECAUTION:
DO NOT REMOVE ANY COVER WHILE THE CAMERA IS OPERATING.
PAL: USE ONLY RECOMMENDED POWER SUPPLY, 220 TO 240 VAC, 50 Hz.

CAUTION:
LENS MOUNT OF THE CAMERA IS "CS" MOUNT. CAMERA LENS MOUNT IS SHALLOW, SOME CAMERA
LENSES MAY BOTTOM OUT AND DAMAGE THE CCD IMAGER.
DO NOT TOUCH THE CCD GLASS SURFACE.
THE CAMERA MUST BE INSTALLED NEAR A SOCKET OUTLET, WHICH COULD BE EASILY ACCESSIBLE.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER
(OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

GRAPHIC SYMBOL EXPLANATION
The lighting flash with an arrow-head symbol within an equilateral triangle is intended to
alert the user to the presence of uninsulated "dangerous voltage" within the product's
enclosure, which may be of sufficient magnitude to constitute a risk of electric shock to
persons.

The exclamation point within an equilateral triangle is intended to alert the user to the
presence of important operating and maintenance (servicing) instructions in the literature
accompanying the appliance.

Important Safety Instructions

1. Read Instructions. All the safety and operating instructions should be read before the camera is operated.

2. Retain Instructions. The safety and operating instructions should be retained for future reference.

3. Heed Warnings. All warnings on the camera and in the operating instructions should be adhered to.

4. Follow Instructions. All operating and use instructions should be followed.

5. Cleaning: Unplug the power unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. Attachments: Do not use attachments not recommended by your appliance dealer, as they may cause hazards.

7. Water and Moisture: Do not use the camera in any location in which it may be exposed to water or moisture. (For example, dripping, splashing, or liquid near equipment etc.)

8. Accessories: Do not place the camera on an unstable cart, stand, tripod, bracket, or table. The camera may fall, causing serious injury to a child or adult, and serious damage to the camera. Use only with mounting accessories recommended by your appliance dealer or sold with the camera. Any mounting of the camera should follow your appliance dealer's instructions.

   The camera must be installed in a location or on a piece of equipment that can withstand three times the total weight of the camera, including the lens, camera, mount, adapter, etc.

9. Any appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

10. Ventilation: The camera should never be placed near or over a radiator or heat register. The camera should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or your appliance dealer's instructions have been adhered to.

11. Power Sources: The camera should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply for your installation site, consult your appliance dealer or local power company.

12. Power Cord Protection: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the camera.

13. Lightning: For added protection for the camera during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the camera due to lightning and power line surges.

14. Overloading: Do not overload the wall outlet and extension cord, as this can result in a risk of fire or electric shock.

15. Object and Liquid Entry: Never push objects of any kind into the camera through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the camera.

16. Servicing: Do not attempt to service the camera yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

17. Damage Requiring Service: Unplug the power unit from the wall outlet. Refer servicing to qualified service personnel under the following conditions.
    a. When the power supply cord or plug is damaged.
    b. If liquid has been spilled or objects have fallen into the camera.
    c. If the camera has been exposed to rain or water.
    d. If the camera does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the camera to its normal operation.
    e. If the camera has been dropped or the cabinet has been damaged.
    f. When the camera exhibits a distinct change in performance. This indicates a need for service.

18. Replacement Parts: When replacement parts are required, be sure the service technician has used replacement parts specified by a qualified dealer or that have the same characteristics as the original part.

    Unauthorized substitutions may result in fire, electric shock, or other hazards.

19. Safety Check: Upon completion of any service or repairs to the camera, ask the service technician to perform safety checks to determine that the camera is in proper operating condition.

Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

EQUIPMENT HANDLING PRECAUTIONS

To avoid damaging your camera, observe the following precautions:

1. The camera has threaded mounting locations on the top and bottom of the case. Use only a standard photographic mounting bolt with a 1/4-20 UNC thread.

2. Do not touch the surface of the optical filter. If the filter is dusty or is accidentally touched, use clean, compressed air or lens cleaning paper to clean it.

3. Do not expose the camera imager to direct sunlight as this may impair camera performance. Always keep the lens mount cap in place until you install the lens.

4. Do not use this camera outdoors without an appropriate enclosure. Do not install near flammable gas or corrosive chemical fumes.

5. Use clean, soft cloths to clean the camera case. If necessary, use a cloth moistened with a neutral detergent diluted with water; then dry with a dry cloth. Never use alcohol, benzene, or other volatile solutions.

Description

The C10CH Series camera is a compact, ultra high resolution camera that features a 1/3-inch CCD imager. Its ultra high resolution and high-density image sensor produces superior images.

On-screen programmable menus can be accessed using the side panel button. Use these menus to customize camera settings for the specific application.

The C10CH Series camera has a standard CS mount and can be used with fixed, manual, or auto iris lenses. The auto iris is controlled through a standard 4-pin square connector that is included with all Pelco auto iris lenses.

The C10CH Series camera is quick and easy to install and is ideal for Pelco's DomePak® and ImagePak® fixed camera dome/enclosure packages.

MODELS

C10CH-6	1/3-inch ultra high resolution color, CCD camera, 24 VAC or 12 VDC, NTSC format
C10CH-6X	1/3-inch ultra high resolution color, CCD camera, 24 VAC or 12 VDC, PAL format
C10CH-7X	1/3-inch ultra high resolution color, CCD camera, 220 to 240 VAC, PAL format

OPTIONAL ACCESSORIES

C10-UM	C10 series universal wall/ceiling/rail mounting kit.
LDC100	Auto iris drive converter. Converts a DC drive auto iris lens to a video drive auto iris lens. Compatible with all lens size formats.
PCMA40	Lens adapter. Adapts standard C mount lenses to CS mount cameras.

REQUIRED TOOLS

- Small Phillips screwdriver for connector cover
- Small flat tip screwdriver for serial termination
- Allen wrench (1.5 mm) for back focus adjustment
- Neutral density filter (ND3) for auto iris adjustment

Camera Layout
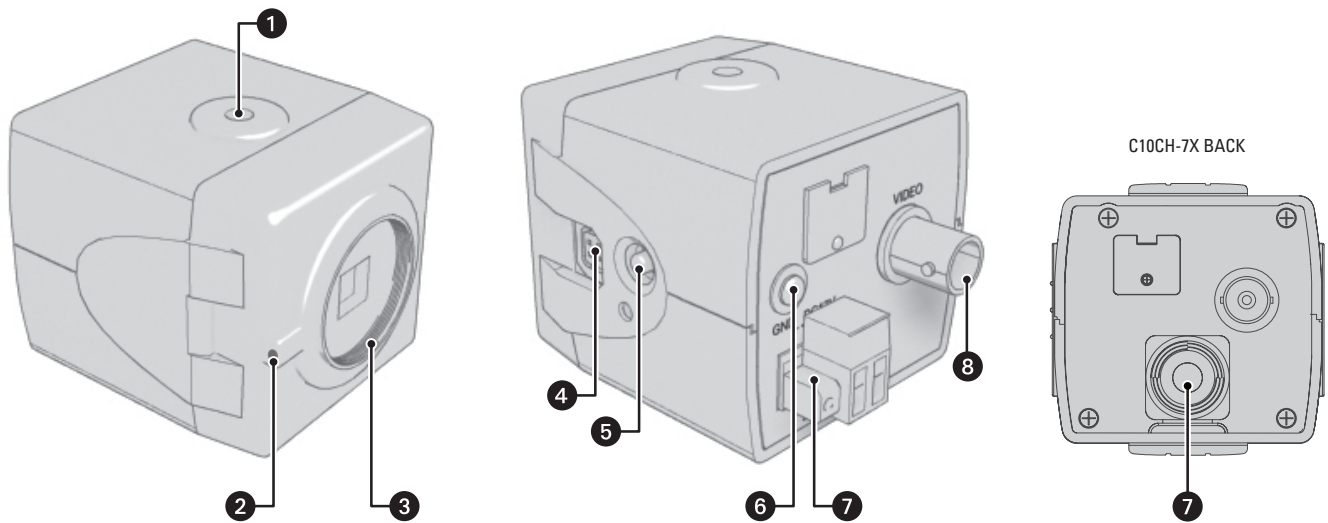
Figure 1. C10CH Series Camera

1 Camera Mount: Use the top or bottom mount hole. The maximum thread depth is 0.25 inches (6.4 mm). Refer to *Camera Mounting* on page 11.

2 Back Focus Locking Screw: Use a 1.5-mm Allen wrench to adjust the back focus (refer to *Lens Focusing* on page 25). Back focus is set at the factory for a standard CS mount back focus distance.

3 Lens Mount: Mount a standard CS mount lens to the C10CH Series camera (refer to *Lens Mounting* on page 10). To use a C mount lens, install a C/CS mount adapter.

4 Auto Iris Lens Connector: Insert the 4-pin connector from the DC drive auto iris lens into this connector (refer to *Lens Mounting* on page 10).

5 Setup Button: Use this 5-position button to configure the camera through the setup menus (refer to *Accessing the Setup Menus* on page 15).

6 Ground Screw: Use this screw terminal as a ground.

7 Power Connector (refer to *Connecting Power* on page 12):
- C10CH-6/6X, Terminal Block: Use the 2-pin terminal block to connect either 12 VDC or 24 VAC power.
- C10CH-7X, Power Cord: A 2-terminal type cord for 220 to 240 VAC.

8 Video Output Connector: Connect a coaxial video cable to this BNC connector to output the video image (refer to *Connecting Video* on page 11).

Installation
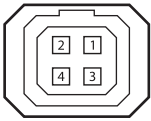
LENS MOUNTING

The C10CH Series camera supports both manual and auto iris lenses, either fixed focal length or varifocal. It also supports both DC and video drive lenses. It automatically senses an auto iris lens as soon as you plug in the connector. The camera has a standard CS mount that can accept a C mount lens with a PCMA40 lens adapter.

After mounting a DC drive auto iris lens, but before using the camera, perform the DC drive auto iris automatic adjustment procedure (refer to *DC Iris Level* on page 20). Also perform this procedure each time you change the lens.

WIRING AN AUTO IRIS LENS

Auto iris lenses are controlled through the 4-pin drive connector (type D4-152N). Figure 2 identifies the pin connections for the auto iris lens connector on the side of the camera.

LENS CONNECTOR

Pin	DC Drive	Video Drive
1	Control coil negative (−)	+9 VDC (40 mA maximum)
2	Control coil positive (+)	+9 VDC (40 mA maximum)
3	Drive coil positive (+)	AI-Video
4	Drive coil negative (−)	GND

Figure 2. DC Drive Auto Iris Lens Connector

MOUNTING THE LENS

To mount the lens onto the camera refer to Figure 3, and then complete the following steps:

1. Make sure the lens does not touch the camera imager when installed.

2. Use clean, compressed air or a clean, dry lens cloth to make sure there is no dust or other foreign matter between the lens and the camera imager.

3. **C mount lens:** Screw the adapter onto the lens.

4. Screw the lens onto the lens mount.

CS MOUNT LENS

C/CS MOUNT ADAPTER
(FOR C MOUNT LENS ONLY)

AUTO IRIS LENS CABLE
AND CONNECTOR (OPTIONAL)
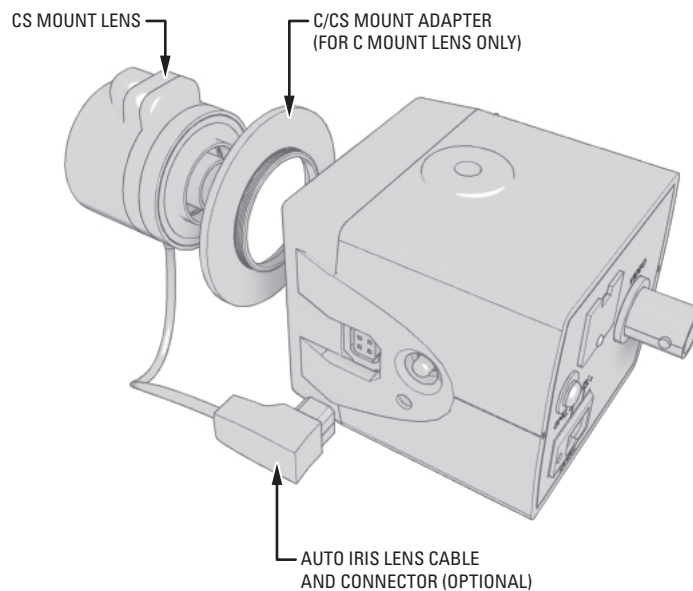
Figure 3. Mounting Lens to Camera

5. **Auto iris lens:** Connect the 4-pin connector from the lens to the connector on the side of the camera.

6. Perform the lens focusing procedure before using the lens (refer to *Lens Focusing* on page 25).

CAMERA MOUNTING

The C10CH Series camera can be mounted from either the top or bottom, depending on the type of camera mount used in your installation. Use a standard 1/4-20 screw. The maximum thread depth (top) is 0.188 inches (4.7 mm). To extend the thread depth (top) to 0.25 inches (6.4 mm), use the camera mount spacer (supplied). The maximum thread depth (bottom) is 0.25 inches (6.4 mm).

The C10CH Series camera can be fitted with most Pelco lenses and mounted into most Pelco domes and enclosures, resulting in the greatest possible number of combinations. This means you can find a solution for nearly any application.

When selecting a lens, dome, or enclosure for this camera, consider how the physical dimensions of each component may affect camera installation and operation.

NOTE: To simplify lens and enclosure selection, Pelco offers ImagePak options for the C10CH Series camera. Select the lens and the dome or enclosure, and Pelco will build and test it for you. Contact Pelco or your dealer for more information.

CONNECTING VIDEO

Connect a coaxial video cable to the BNC connector on the back of the camera. Refer to Table A for the type of video coaxial cable to use.

Table A. Video Coaxial Cable Requirements

Cable Type*	Maximum Distance
RG59/U	750 ft (229 m)
RG6/U	1,000 ft (305 m)
RG11/U	1,500 ft (457 m)

*Cable requirements:

75-ohms impedance

All-copper center conductor; steel-center conductor cable may result in poor performance

All-copper braided shield with 95% braid coverage

If white spots appear in the video image, one or more pixels on the camera imager may be defective. This condition is common to CCD camera imagers. To correct this condition, refer to *Pixel Correction* on page 23.

CONNECTING POWER

The C10CH Series camera is designed to operate from either a 12 VDC or a 24 VAC power source. The camera automatically senses power type. Use only a Class 2 isolated power source that can supply 12 VDC ±15% or 24 VAC ±15%, 50/60 Hz. Maximum power consumption is about 3.5 W.

⚠ **WARNINGS:**

- Do not connect high voltage power to the camera because you may damage the camera.

- Do not short circuit the power leads when connecting the power supply to the camera.

- Do not remove the connector cover during camera operation.

NOTES:

- Be sure to use 60 Hz power for NTSC (C10CH-6) and 50 Hz power for PAL (C10CH-6X and C10CH-7X).

- Install the camera near a socket or outlet that is easily accessible.

Use Table B to help you identify the necessary wire gauge and maximum cable distance. This table applies to 2-conductor solid copper wire. (Reduce distance by 10 percent for stranded copper wire.) These maximum distances are based on a maximum allowable voltage drop of 10 percent.

Table B. Recommended Wire Gauge and Maximum Wiring Distances

Wire Gauge	Maximum Distance	
	12 VDC	24 VAC
24 AWG (0.25 mm^2)	80 ft (24 m)	323 ft (98 m)
22 AWG (0.35 mm^2)	128 ft (39 m)	513 ft (156 m)
20 AWG (0.5 mm^2)	203 ft (61 m)	815 ft (248 m)
18 AWG (1.0 mm^2)	323 ft (98 m)	1,295 ft (394 m)
16 AWG (1.5 mm^2)	514 ft (156 m)	2,056 ft (626 m)
14 AWG (2.5 mm^2)	816 ft (248 m)	3,264 ft (994 m)
12 AWG (4.0 mm^2)	1,295 ft (394 m)	5,183 ft (1,579 m)
10 AWG (6.0 mm^2)	2,057 ft (626 m)	8,228 ft (2,507 m)

C10CH-7X CAMERA ONLY

The C10CH-7X camera uses a power main supply of 220 to 240 VAC, 50 Hz. This main supply must also have a minimum rating of 50 mA.

CAUTION: Unplug the power cord during installation.

CONNECTING AC POWER

The C10CH Series camera requires a power supply of 24 VAC ±15% (20.4 to 27.6 VAC), 50/60Hz. Make sure the power supply has a minimum rating of 270 mA.

When connecting more than one camera to the same AC transformer, remember the following information:

- Connect the same side of the transformer to the same terminal on all cameras. Otherwise, the cameras may be out of phase, causing a vertical roll when switching between cameras (refer to *Camera Synchronization* on page 27 for more information).
- Use a transformer whose rated power supply has a minimum of 270 mA multiplied by the number of cameras.

To connect AC power, refer to Figure 4 and complete the following steps:

1. Strip at least 0.4 inches (10 mm) of the insulation from both power wires.

2. Connect both power wires to the terminal block that is supplied with the camera.

3. Plug the terminal block into the 2-pin connector on the back of the camera and tighten the screw.

4. If you are also using a ground wire, connect it to the screw marked GND.
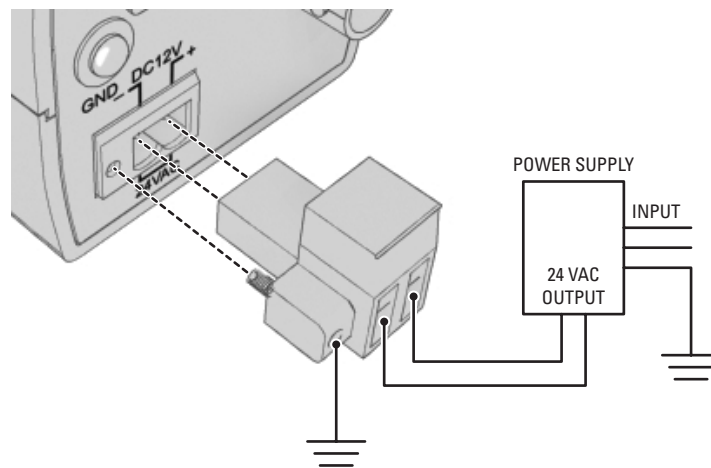
Figure 4. Connecting AC Power

CONNECTING DC POWER

The C10CH Series camera requires a power supply of 12 VDC ±15% (10.2 to 13.8 VDC). Make sure the power supply has a minimum rating of 390 mA.

⚠ **WARNINGS:**

- For safety, include a 1.0 A slow blow fuse when connecting DC power, as shown in Figure 5.
- The DC power supply must be UL and CE certified.
- Make sure you wire the power polarity correctly.

To connect DC power refer to Figure 5, and then complete the following steps:

1. Strip at least 0.4 inches (10 mm) of the insulation from both power wires.

2. Connect the negative wire from the power supply to the indicated hole in the terminal block that is supplied with the camera.

3. Connect the positive wire from the power supply to the indicated hole in the terminal block.

4. Plug the terminal block into the 2-pin connector on the back of the camera and tighten the screw.

5. For safety, add a 1.0 A slow blow fuse to the positive wire from the power supply. The fuse should be less than 4 inches (10 cm) from the positive terminal on the power supply.
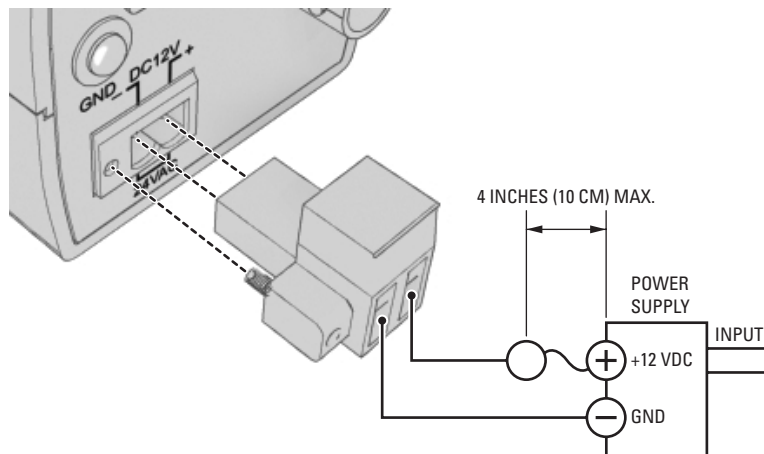
Figure 5. Connecting DC Power

Accessing the Setup Menus

Use the 5-position button controller on the side panel of the camera to access and navigate the on-screen display (OSD) menus (refer to Figure 6 and Table C).
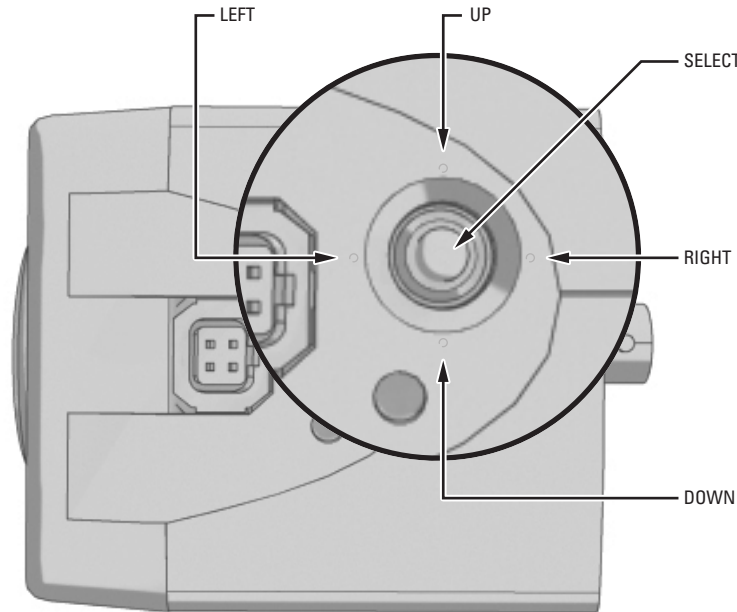
Figure 6. Side Panel Button Options

Table C. Accessing the OSD Menu

Menu Options	Navigating the Menu
Display the MAIN MENU on the screen.	Press and hold down the center button for two seconds.
Move the cursor up or down in a menu or toggle through menu selections.	Move the button up or down.
Move the cursor right or left in a menu.	Move the button left or right.
Select a menu or make a menu selection.	Press the center button.
Save a setting and then return to the menu.	Press the center button.

To display a menu, complete the following steps:

1. Press and hold the center button for two seconds to open the MAIN MENU.

2. Press the button up or down to select a menu.

3. Press the center of the button to open the menu.

To change a setting, complete the following steps:

1. Press the button up or down to select the item.

2. Press the center of the button to open the item.

3. Press the button up or down to toggle through the menu selections.

4. Press the center of the button to save the setting and return to the menu.

To move to a previous menu, select BACK and press the center of the button. To close the setup menus, select EXIT from any menu and press the center of the button.

NOTES:
- When you select BACK or EXIT on any menu, the camera saves the current settings.
- The menu closes automatically after three minutes of inactivity.

Setup Menus

The C10CH Series camera uses setup menus instead of hardware switches for configuring the camera. As a result, you have more options for customizing the camera for its specific application.

NOTE: After you customize any aspect of the C10CH Series camera, be sure to save your custom settings. (Refer to *Profiles* on page 18 for information about saving custom settings.)

```
                                          PROFILES

                                STANDARD
                                GAMING
                                CUSTOM

                                BACK      EXIT


     MAIN MENU

PROFILES              ->
EXPOSURE SET.         ->
FUNCTION SET.         ->
SAVE AS CUSTOM        ->
PIXEL CORRECTION      ->
SYSTEM INFORMATION    ->

                EXIT
```

```
         EXPOSURE SET.                              ECLIPSER

AUTO EXPOSURE    -> ESC              ECLIPSER          -> OFF
ECLIPSER         -> OFF              THRESHOLD         -> 17
DC IRIS LEVEL    -> -8               LEVEL             -> 4
FLICKERLESS      -> OFF
AGC              -> LOW              BACK      EXIT

BACK      EXIT
```

```
                                             LINE SYNC

                                    LINE SYNC         -> AUTO
                                    V-PHASE ADJ       -> 38

                                    BACK      EXIT
```
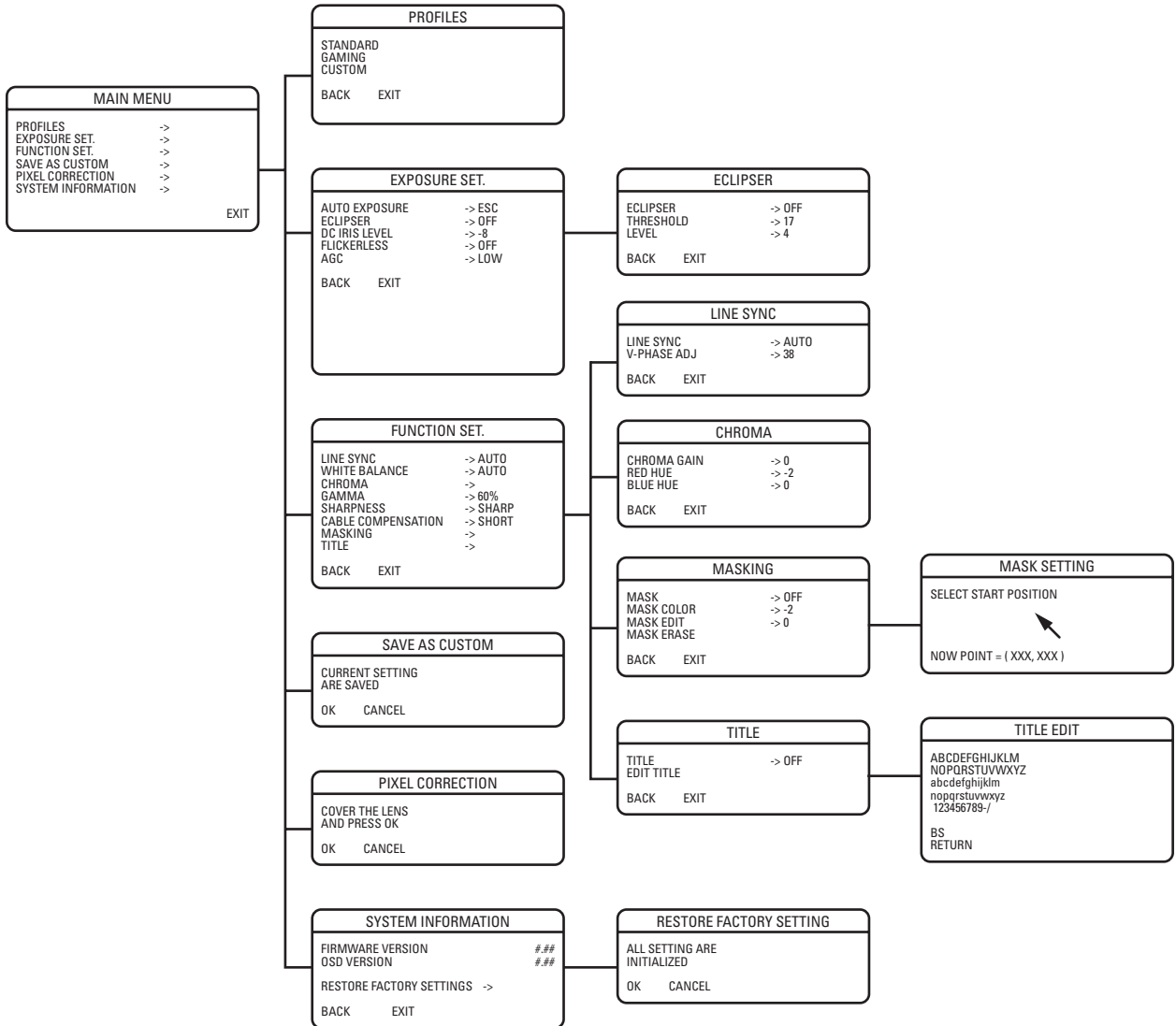
```
         FUNCTION SET.                           CHROMA

LINE SYNC           -> AUTO         CHROMA GAIN       -> 0
WHITE BALANCE       -> AUTO         RED HUE           -> -2
CHROMA              ->              BLUE HUE          -> 0
GAMMA               -> 60%
SHARPNESS           -> SHARP        BACK      EXIT
CABLE COMPENSATION  -> SHORT
MASKING             ->
TITLE               ->

BACK      EXIT
```

```
                                            MASKING                          MASK SETTING

                                   MASK           -> OFF        SELECT START POSITION
                                   MASK COLOR     -> -2
         SAVE AS CUSTOM            MASK EDIT      -> 0
                                   MASK ERASE
CURRENT SETTING
ARE SAVED                          BACK      EXIT                NOW POINT = ( XXX, XXX )

OK      CANCEL
```

```
                                             TITLE                            TITLE EDIT

                                   TITLE          -> OFF        ABCDEFGHIJKLM
                                   EDIT TITLE                   NOPQRSTUVWXYZ
         PIXEL CORRECTION                                       abcdefghijklm
                                   BACK      EXIT               nopqrstuvwxyz
COVER THE LENS                                                   123456789-/
AND PRESS OK
                                                               BS
OK      CANCEL                                                 RETURN
```

```
         SYSTEM INFORMATION                  RESTORE FACTORY SETTING

FIRMWARE VERSION        #.##       ALL SETTING ARE
OSD VERSION             #.##       INITIALIZED

RESTORE FACTORY SETTINGS  ->       OK      CANCEL

BACK        EXIT
```
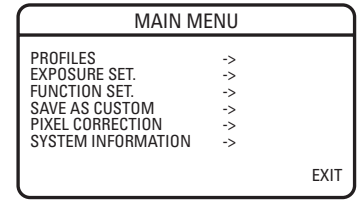
MAIN MENU

The following sections describe each menu and the settings associated with that menu. The sample screens in each section show the default settings.

To display the MAIN MENU, complete the following steps:

1. Press and hold the center button on the side of the camera (refer to *Accessing the Setup Menus* on page 15).

2. Use the Pelco controller to navigate through the menus.

```
                    MAIN MENU

PROFILES                       ->
EXPOSURE SET.                  ->
FUNCTION SET.                  ->
SAVE AS CUSTOM                 ->
PIXEL CORRECTION               ->
SYSTEM INFORMATION             ->

                                      EXIT
```

Profiles

Select this option to access the camera profile settings (refer to *Profiles* on page 18).

Exposure Set.

Select this option to configure the exposure settings (refer to *Exposure Settings* on page 19).

Function Set.

Select this option to configure the function settings (refer to *Function Settings* on page 21).

Save as Custom

Select this option to configure and save a custom profile (refer to *Save as Custom* on page 23).

Pixel Correction

Select this option to perform the automatic pixel correction procedure (refer to *Pixel Correction* on page 23).

System Information

Select this option to display the camera firmware information or to restore the factory default settings (refer to *System Information* on page 24).

PROFILES

Use this option to select a profile or save custom settings. Use profiles for faster installation or to adjust camera settings quickly for changing light conditions. The default setting is STANDARD.

The C10CH Series camera offers four predefined profiles and one custom, or user-definable, profile. You cannot modify predefined profiles.

```
                              PROFILES

STANDARD
GAMING
CUSTOM

BACK      EXIT
```
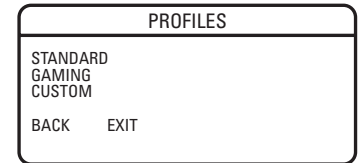
ACTIVE

Select one of the following application profiles:

STANDARD: Select this profile for most scenes.

GAMING: Select this profile if the camera scene is illuminated by mixed interior lighting and includes self-illuminated devices. For example, an arcade with gaming machines with bright, flashing lights.

CUSTOM: Select this profile to activate your saved custom settings (refer to *Save as Custom* on page 23).

Table D shows the default camera settings for each profile. Figure 7 shows sample scenes for each camera profile.

Table D. Settings by Profile

Profile	STANDARD (default)	GAMING
Exposure Settings		
AUTO EXPOSURE	ESC	ESC
ECLIPSER	OFF	OFF
DC IRIS LEVEL	-8	-8
FLICKERLESS	OFF	OFF
AGC	LOW	LOW
Function Settings		
LINE SYNC	AUTO	INT
WHITE BALANCE	AUTO	INDOOR
CHROMA	—	—
GAMMA	60%	60%
SHARPNESS	SHARP	SHARP
CABLE COMPENSATION	SHORT	SHORT
MASKING	—	—
TITLE	—	—

EXPOSURE SETTINGS

Select this option to configure the exposure settings for the C10CH Series camera.

```
        EXPOSURE SET.

AUTO EXPOSURE        -> ESC
ECLIPSER             -> OFF
DC IRIS LEVEL        -> -8
FLICKERLESS          -> OFF
AGC                  -> LOW

BACK     EXIT
```

AUTO EXPOSURE

The automatic exposure feature automatically adjusts the electronic shutter and mechanical iris to set the correct exposure. Default settings depend on the selected profile (refer to Table D on page 18.) Select one of the following automatic exposure modes:

ESC: Select this mode for optimal brightness level by increasing the number of stored fields.

NORMAL: Select this mode to use the electronic shutter and mechanical iris to control exposure.
As lighting conditions change, the camera adjusts exposure based on input from the electronic shutter.

BLC: Select this mode for scenes that are strongly backlit. The camera corrects the image to bring out the detail of the subject, such as a person entering a building through a door.

BLC + ESC: Select this mode to make objects in the center of the scene brighter. ESC adjusts the shutter speed according to the incident light levels.

ECLIPSER

The eclipser feature adjusts a foreground image to compensate for a very bright background. With a normal auto iris lens, when a bright backlight overcomes a dim foreground subject, the iris may not compensate for the scene properly. As a result, details in the image are lost.

Use this feature in parking garages, parking lots, driveways, and other entrances with a variety of bright light sources.

```
            ECLIPSER

ECLIPSER             -> OFF
THRESHOLD            -> 17
LEVEL                -> 4

BACK     EXIT
```

NOTE: You must disable ESC to use the eclipser feature.

ECLIPSER: Select ON or OFF to enable or disable the eclipser function. When set to ON, the THRESHOLD and LEVEL settings can be changed. The default setting is OFF.

THRESHOLD: The threshold value identifies an adjustment for the foreground brightness. The range is 0 (zero) to 25. The default setting is 17.

LEVEL: The level value identifies an adjustment level for the lens to ignore the background. The range is 1 (light gray) to 8 (black). The default setting is 4.

To activate this setting, complete the following steps:

1. Set AGC to OFF.

2. Set AUTO EXPOSURE to NORMAL.

3. Set ECLIPSER to OFF.

4. Set the video output level to one of the following lens options:
    • **Video type lens:** Set the response selector of the auto iris lens to AVERAGE. Set the video output level of the camera to 0.75 Vp-p by adjusting the LEVEL VR of the auto iris len.
    • **DC type lens:** Set the video output level of the camera to 0.75 Vp-p by adjusting the DC IRIS LEVEL.

5. If the object in the foreground is dark (unrecognizable) and the background is predominant, set ECLIPSER to ON, and then set LEVEL to 4 or 5.

6. Adjust the THRESHOLD until the object in the foreground can be seen.

DC IRIS LEVEL

Select this option to adjust the electronic properties of the DC drive auto iris lens to the auto iris electronic properties of the camera. Perform this procedure before using the camera or each time you change the lens.

To perform this procedure, complete the following steps:

1. Focus the camera (refer to *Lens Focusing* on page 25).

2. Aim the camera at a bright, flickerless scene.

3. Select DC IRIS LEVEL from the MAIN MENU.

4. Adjust the DC IRIS LEVEL value (for the best image). The range is -20 to 20. The default setting is -8.

5. Press the center of the button to save the value.

6. Exit the MAIN MENU.

FLICKERLESS

In some installations, the cycle of the fluorescent lights may interfere with the electronic iris shutter speed. Use this option to override the shutter speed. When enabled, the shutter speed is set to 1/100 (NTSC) or 1/120 (PAL).

Select ON or OFF. The default setting is OFF.

NOTE: This option appears when AUTO EXPOSURE is set to NORMAL or BLC.

AUTOMATIC GAIN CONTROL

Automatic gain control (AGC) automatically adjusts the image when the light level changes. Most scenes benefit from AGC operation.

Select LOW, HIGH, or OFF. The default setting is LOW.

FUNCTION SETTINGS

Select this option to configure the function settings for the C10CH Series camera.

```
           FUNCTION SET.

LINE SYNC               -> AUTO
WHITE BALANCE           -> AUTO
CHROMA                  ->
GAMMA                   -> 60%
SHARPNESS               -> SHARP
CABLE COMPENSATION      -> SHORT
MASKING                 ->
TITLE                   ->

BACK      EXIT
```

LINE SYNC

Use line synchronization to eliminate the vertical roll that occurs when multiple cameras are connected to the same switching device. Line synchronization locks each camera to the same frame rate.

Line Sync

Select one of the following line sync options:

```
              LINE SYNC

LINE SYNC               -> AUTO
V-PHASE ADJ             -> 38

BACK      EXIT
```

AUTO: When using AC power, select this option to operate in line lock mode. This mode synchronizes the frame rate to the power phase. When selected, you can also manually set the vertical phase for this camera (refer to *V-Phase Adjustment* below and to *Camera Synchronization* on page 27 for more information).

INT: Select this option to use the internal sync generator.

The default setting is AUTO, except for the GAMING profile, whose default is INT.

NOTES:

- When using DC power, the camera always uses the internal synchronization generator.
- When you select INT, the V-PHASE ADJ option is disabled.

V-Phase Adjustment

Use this menu to adjust the vertical phase for line synchronization. The range is 0 (zero) to 52 for NTSC cameras and 0 (zero) to 62 for PAL cameras.

Press the button up or down to adjust vertical phase. When correct, press the center of the button to return to the LINE SYNC menu.

WHITE BALANCE

The C10CH Series camera offers four white balance options. White balance settings define how the camera processes video images to render true colors in a scene. White balance is especially effective in scenes with changing color temperatures. Use it also in installations with incandescent, fluorescent, or outdoor lighting.

Select one of the following white balance modes:

AUTO: In this mode, the camera automatically adjusts the white balance based on the colors in the camera scene. The camera continually delivers the best possible image.

HOLD: Use this mode to calibrate the camera to the white balance in a neutral scene. This prevents dominant colors in the target scene from affecting white balance (refer to *Manual White Balance Calibration* on page 28 for more information).

INDOOR: Use this mode for indoor scenes. The white balance gain is set to approximately 2,800°K and does not change as the scene colors change.

CHROMA

Select this option to display the MANUAL RED/BLUE menu.

```
              CHROMA

CHROMA GAIN             -> 0
RED HUE                 -> -2
BLUE HUE                -> 0

BACK      EXIT
```

CHROMA: Use this option to increase or decrease the light level in the camera image. Select a value between -1 and 1. The default setting is 0 (zero).

RED HUE: Use this option to either increase or decrease the red hue in the camera image. Select a value between -5 and 5. The default setting is -2.

BLUE HUE: Use this option to either increase or decrease the blue hue in the camera image. Select a value between -5 and 5. The default setting is 0 (zero).

GAMMA

Gamma correction adjusts the video signal to compensate for the nonlinear response of the monitor display. Select one of the following options: 60%(NORM) or 100%. The default setting depends on the selected profile (refer to Table D on page 18).

SHARPNESS

Sharpness enhances picture detail by increasing the aperture gain of the camera and sharpening the edges in the picture. Available settings include SOFT A, SOFT B, and SHARP. The default setting is SHARP.

CABLE COMPENSATION

Cable compensation mode adjusts the signal output in proportion to the length of the cable. Available settings include SHORT, MIDDLE, and LONG. The default setting is SHORT.

SHORT: Use this option for cable lengths up to 328 ft (100 m).

MIDDLE: Use this option for cable lengths from 328 to 984 ft (100 to 300 m).

LONG: Use this option for cable lengths from 984 to 1640 ft (300 to 500 m).

MASKING

Masking lets you block certain areas of a camera scene. A maximum of eight masks can be defined.

```
            MASKING

MASK                    -> OFF
MASK COLOR              -> -2
MASK EDIT              -> 0
MASK ERASE

BACK      EXIT
```

NOTES:

- When you enable masking, electronic zoom is disabled. If electronic zoom is active, masking is disabled.

- If you add a ninth mask, the camera erases the first mask. You cannot configure more than eight masks.

MASK: Use this option to enable or disable masking. The default setting is OFF.

MASK COLOR: Use this option to select the color of the mask. Available settings are black, white, gray, red, green, blue, and yellow. The default setting is BLACK.

```
         MASK SETTING

SELECT START POSITION



NOW POINT = ( XXX, XXX )
```

MASK EDIT: Use this option to edit one mask. To edit a mask, complete the following steps:

1. Change the MASK setting on the MASKING menu to ON.

2. Select the MASK EDIT menu. The MASK SETTING menu appears.

3. Use the pointer to configure the mask area.
    a. Press the button up, down, left, or right to move the cursor to the upper-left corner of the mask.
    b. Press the center of the button to mark the upper-left corner.
    c. Press the button up, down, left, or right to move the cursor to the lower-right corner of the mask. If you move the cursor either left or above the start point, the mask edit is cancelled.
    d. Press the center of the button to mark the lower-right corner. The mask area is blacked out. The MASKING menu appears with the new mask.

4. Repeat step 3 for each additional mask.
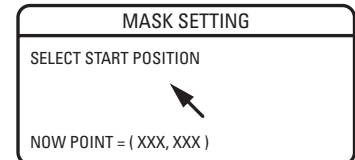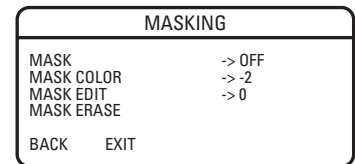
Mask Erase

Select this option to erase one or more masks. The camera erases masks from the last created to the first created. To erase a mask, select MASK ERASE. The mask that was last created disappears. Repeat to erase additional masks.

TITLE

Select this option to configure the camera title.

TITLE: Use this option to enable or disable the title display. The default setting is OFF.

EDIT TITLE: Use this option to enter or edit the camera title, up to 16 characters. The default setting is blank.

```
┌─────────────────────────────┐
│            TITLE            │
├─────────────────────────────┤
│ TITLE                -> OFF │
│ EDIT TITLE                  │
│                             │
│ BACK      EXIT              │
└─────────────────────────────┘
```

To enter a camera title, complete the following steps:

1. Change the TITLE setting on the TITLE menu to ON.

2. Select the EDIT TITLE menu. The EDIT TITLE menu appears.

3. Press the button up, down, left, or right to move the cursor to the desired character.

   The space character is located below the letter "n."

4. Press the center of the button to select the character. The selected character appears in the blank area at the bottom of the screen.

5. To clear a character, select BS (backspace). The camera deletes the last character entered.

6. Repeat steps 3 and 4 until you have entered the camera title.

7. When the title is correct, select BACK to return to the TITLE menu.

```
┌─────────────────────────────┐
│          TITLE EDIT         │
├─────────────────────────────┤
│ ABCDEFGHIJKLM               │
│ NOPQRSTUVWXYZ               │
│ abcdefghijklm               │
│ nopqrstuvwxyz               │
│  123456789-/                │
│                             │
│ BS                          │
│ RETURN                      │
└─────────────────────────────┘
```

SAVE AS CUSTOM

Select this option to create and save a custom profile. Whenever you open and make changes to the EXPOSURE SET and FUNCTION SET menus, the camera stores the settings. These setting can be saved as a custom profile.

```
┌─────────────────────────────┐
│       SAVE AS CUSTOM        │
├─────────────────────────────┤
│ CURRENT SETTING             │
│ ARE SAVED                   │
│                             │
│ OK      CANCEL              │
└─────────────────────────────┘
```

To save defined exposure and function settings as a CUSTOM profile, complete the following steps:

1. Move the cursor to the SAVE AS CUSTOM menu.

2. Press the menu selection button, the SAVE AS CUSTOM menu is displayed.

3. Move the cursor to OK and then press the selection button again. The profile is saved and the screen automatically returns to the MAIN MENU.

PIXEL CORRECTION

If white spots appear in the video image, one or more pixels on the camera imager may be defective. This condition is common to CCD camera imagers.

Select this option to automatically detect and correct these defects. This feature helps you maintain image quality.

```
┌─────────────────────────────┐
│       PIXEL CORRECTION      │
├─────────────────────────────┤
│ COVER THE LENS              │
│ AND PRESS OK                │
│                             │
│ OK      CANCEL              │
└─────────────────────────────┘
```

To perform this procedure, complete the following steps:

1. Use a lens cap to cover the lens. Make sure no light can enter the lens. The mechanical iris lens aperture does not completely block the light. Therefore, you should use a lens cap.

2. Select PIXEL CORRECTION. The PIXEL CORRECTION menu appears.

3. Select OK. The camera performs the procedure and the MAIN MENU appears.

NOTE: Any defective pixels that cannot be completely corrected may still appear.

SYSTEM INFORMATION

Select this option to display the camera firmware information.

Restore Factory Settings

Select this option to reset the camera to the factory default settings. This option clears all saved user-definable settings, except the following:

```
RESTORE FACTORY SETTING
ALL SETTING ARE
INITIALIZED
OK      CANCEL
```

- CAMERA SETUP menu: ADDRESS, COM SPEED

- LINE SYNC menu: V-PHASE ADJ

- PIXEL CORRECTION

To restore the camera to the factory default settings, complete the following steps:

1. Select RESTORE FACTORY SETTINGS on the SYSTEM INFORMATION menu. The RESTORE FACTORY SETTINGS menu appears.

2. Select OK. The camera resets all parameters to the factory default settings (except those listed above), and then the MAIN MENU appears.
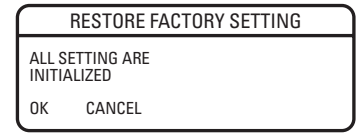
Lens Focusing

After mounting the lens, you must focus your C10CH Series camera. You will adjust both the back focus (on the camera) and the fine focus (on the lens).

NOTE: The back focus has already been adjusted using a standard CS mount lens. However, you might need to adjust it again to match the mounted lens.

1. **Auto iris only:** Cover the auto iris lens with a suitable neutral density (ND) filter; this opens the iris fully. For best results, use an ND3 filter.

2. **Manual iris only:** Open the iris completely. Figure 7 shows the manual iris, varifocal, and lens focus locking screws for a sample lens. Refer to your lens documentation for more information.
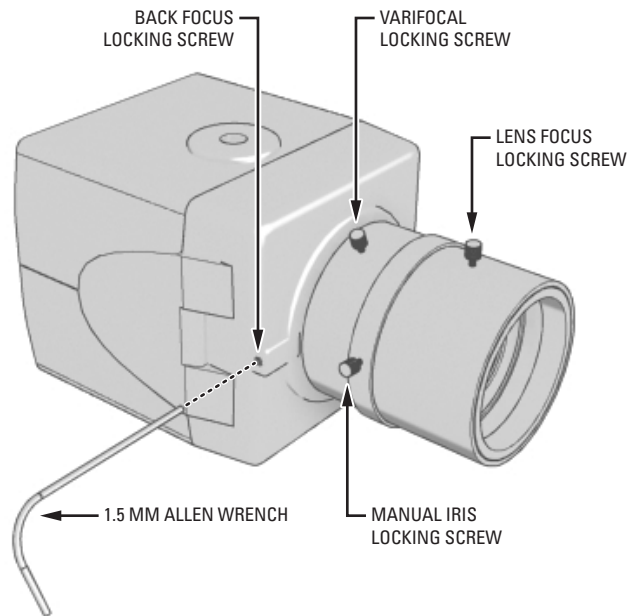
Figure 7. Lens Focus

3. If AGC is set to OFF, set it to LOW or HIGH on the FUNCTION SETTINGS menu. AGC is set to LOW by default.
   a. Display the FUNCTION SETTINGS menu.
   b. Change AGC to either LOW or HIGH.
   c. Select EXIT to save the AGC setting.

4. Aim the camera at the farthest object in the field of view. Make sure it is at least 6.5 ft (2 m) away.

5. **Fixed focal length lens only:**
   a. Set the lens focal length to far (∞).
   b. Adjust the back focus.
   c. Use a 1.5-mm Allen wrench to loosen the back focus locking screw.
   d. Turn the lens until the image is focused. Tighten the back focus locking screw clockwise.

      ⚠ **WARNING:** Do not overtighten the back focus locking screw because you may damage the camera.

      (Back focus is a coarse adjustment. You will make the fine focus adjustment in the next step.)
   e. Adjust the lens focus to achieve the best fine focus.

6. **Varifocal lens only:**
    a. Set the varifocal to wide (W) and the lens focal length to far (∞).
    b. Adjust the back focus:
        (1) Use a 1.5-mm Allen wrench to loosen the back focus locking screw.
        (2) Turn the lens until the image is focused.
        (3) Tighten the back focus locking screw clockwise.

       ⚠ **WARNING:** Do not overtighten the back focus locking screw because you may damage the camera.

       (Back focus is a coarse adjustment. You will make the fine focus adjustment in steps c and d.)
    c. Move the varifocal locking screw up or down to set the field of view.
    d. Adjust the lens focus to achieve the best fine focus.
    e. Repeat steps c and d until the focus is correct.

7. **Manual iris only:** Adjust the iris for the best picture quality. The largest aperture gives the best light sensitivity; the smallest aperture gives the greatest depth of field.

8. Tighten all lens locking screws.

   ⚠ **WARNING:** When tightening the lens locking screws, do not overtighten or force any screw.

9. **Auto iris only:** Remove the ND filter.

10. If necessary, reset the AGC setting to its previous value.
    a. Display the FUNCTION SETTINGS menu.
    b. Change AGC to OFF, LOW, or HIGH.
    c. Select EXIT to save the AGC setting.

11. **Auto iris only:** Perform the auto iris lens adjustment procedure (refer to *DC Iris Level* on page 20*).*

Camera Synchronization

Camera synchronization may affect installations that use two or more AC power supplies for multiple cameras. Due to different power phases, a brief vertical roll may appear on the monitor when switching between cameras. To eliminate this vertical roll, adjust the phase control to synchronize the cameras to one another.

It may be necessary for two people to communicate when synchronizing cameras, one at the camera and the other at the monitor, to observe the vertical roll and the effect of any camera adjustments.

To synchronize cameras, complete the following steps:

1. Choose a reference camera to which all other cameras will be phased.

2. Access V-PHASE ADJ menu for a camera. Press the button up and down to adjust the vertical phase until the camera is synchronized to the reference camera.

   A dual trace oscilloscope is recommended, but not required, to adjust camera phase. Align the vertical sync pulses of the reference camera to the selected camera.

3. After making each adjustment, switch back and forth between the adjusted camera and the reference camera. Repeat this process until the roll between the cameras disappears completely.

4. Adjust the phase of all other cameras by repeating steps 2 and 3. Always adjust to the reference camera selected in step 1.

5. As soon as you finish customizing this and all other camera settings, save your custom settings into the CUSTOM profile. This protects them if the camera loses power or if it must be restarted (refer to *Profiles* on page 18 for more information).

To adjust phase control:

1. Select LINE SYNC on the FUNCTION SETTINGS menu. The LINE SYNC menu appears.

2. Switch the LINE SYNC setting to AUTO.

3. Select V-PHASE ADJ. The V-PHASE ADJ menu appears.

4. Press the button up or down to change the PHASE VALUE. On the C10CH-6 (NTSC) camera, the range is 0 (zero) to 52. On the C10CH-6X (PAL) camera, the range is 0 (zero) to 62.

5. Press the center of the button to return to the LINE SYNC menu.

6. Select EXIT to close the setup menus.

7. As soon as you finish customizing this and all other camera settings, save your custom settings in the CUSTOM profile. This protects them if the camera loses power or if it must be restarted (refer to *Profiles* on page 18 for more information).

Manual White Balance Calibration

In some installations, use manual white balance to render the most accurate image color possible. Mixed color applications may affect the amount of color adjustment. For example, a small white object on a large blue surface may have a reddish tint. Manual white balance uses a calibration image to identify the correct white level. The camera then uses this white level when adjusting overall image color.

NOTE: Manual white balance is recommended only for indoor applications that have a single primary light source.

For example a C10CH camera is installed in a pan/tilt enclosure inside a clothing store, in a shopping mall. A variety of colors are located throughout the store. Overhead lights provide the primary illumination, but some light also enters the store from the mall. As the camera pans a section filled with blue clothing, the camera may redden the image to compensate for the blue. When properly calibrated, the camera will not try to adjust scenes with predominant amounts of red or blue.

To calibrate the manual white balance, complete the following steps:

1. Focus the camera on a neutral color scene. Select a neutral scene with the following characteristics:

    - Little or no black
    - Not predominantly red
    - Not predominantly blue
    - No direct light source, such as a lamp or a window

2. Select WHITE BALANCE on the FUNCTION SETTINGS menu.

3. Select AUTO. This calibrates the white balance gain to the neutral scene.

4. Change WHITE BALANCE from AUTO to MANUAL. This locks the white balance gain into camera memory.

    NOTE: If you change WHITE BALANCE from MANUAL to a different mode, the stored manual white balance settings are erased. You will have to perform this procedure again.

5. Select EXIT to close the setup menus.

6. Focus the camera on the target scene.

7. As soon as you finish customizing this and all other camera settings, save your custom settings into the CUSTOM profile. This protects them if the camera loses power or if it must be restarted (refer to *Profiles* on page 18 for more information).

Specifications

GENERAL

Imaging Device	1/3-inch interline transfer CCD
Picture Elements	
NTSC	768 (H) x 494 (V) (approx. 380k)
PAL	752 (H) x 582 (V) (approx. 440k)
Sensing Area	3/16 x 1/8-inch (4.7 x 3.5 mm)
Scanning System	
NTSC	525 lines, 2:1 interlace
PAL	625 lines, 2:1 interlace
Synchronization	AC line lock/internal
Horizontal Resolution	540 TV lines
Electronic Shutter Range	
NTSC	1/60~1/100,000 second
PAL	1/50~1/100,000 second
Auto Iris Lens Type	DC drive (autosensing)
Sensitivity	0.4 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance
Minimum Illumination	0.3 lux, f/1.2, 50 IRE, AGC on, 75% scene reflectance
Signal-to-Noise Ratio	>50 dB
Vertical Phase	Adjustable ±90°
Automatic Gain Control	Selectable: on/off
Electronic Shutter Control	Selectable: on/off
Backlight Compensation	Selectable: on/off
Eclipser Function	Selectable: on/off
Flickerless Mode	Selectable: on/off; 1/100 sec (NTSC), 1/120 sec (PAL)
Auto White Balance	Selectable: on/off, 2 modes
Signal Processing	Digital signal processing (DSP)
Video Output	1 Vp-p, 75 ohms
Gamma Correction	Selectable: on/off, 0.6, 1.0
White Balance Range	2,500° to 9,500°K

ELECTRICAL

Power Requirements	
C10CH-6	24 VAC ±15%/12 VDC ±15%, 60 Hz
C10CH-6X	24 VAC ±15%/12 VDC ±15%, 50 Hz
C10CH-7X	220 to 240 VAC, 50 Hz
Power Consumption	3 W
Power Connector	2-pin terminal strip, push-in type
Video Connector	BNC
Auto Iris Connector	4-pin connector (miniature square)
Controls	5-position button

MECHANICAL

Lens Mount	CS mount
Camera Mount	1/4-inch UNC-20 screw, top or bottom of camera housing

ENVIRONMENTAL

Operating Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	-4° to 140°F (-20° to 60°C)
Operating Humidity	20% to 80% (noncondensing)
Storage Humidity	20% to 90% (noncondensing)

PHYSICAL

Dimensions
C10CH-6/C10CH-6X	2.95" L x 2.17" W x 1.97" H
	(7.50 x 5.50 x 5.00 cm)
C10CH-7X	5.50" L x 2.17" W x 1.97" H
	(13.97 x 5.50 x 5.00 cm)

Weight (without lens)
C10CH-6/C10CH-6X	0.44 lb (0.20 kg))
C10CH-7X	0.88 lb (0.40 kg)

Shipping Weight
C10CH-6/C10CH-6X	1 lb (0.45 kg)
C10CH-7X	2 lb (0.90 kg)

(Design and product specifications subject to change without notice.)

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years:
  - Fiber optic products
  - TW3000 Series unshielded twisted pair (UTP) transmission products
  - CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models
- Three years:
  - Pelco-branded fixed camera models (CCC1390H Series, C10DN Series, C10CH Series, IP3701H Series, and IX Series)
  - EH1500 Series enclosures
  - Spectra® IV products (including Spectra IV IP)
  - Camclosure® Series (IS, ICS, IP) integrated camera systems
  - DX Series digital video recorders, DVR5100 Series digital video recorders, Digital Sentry® Series hardware products, DVX Series digital video recorders, and NVR300 Series network video recorders
  - Endura® Series distributed network-based video products
  - Genex® Series products (multiplexers, server, and keyboard)
  - PMCL200/300/400 Series LCD monitors
- Two years:
  - Standard varifocal, fixed focal, and motorized zoom lenses
  - DF5/DF8 Series fixed dome products
  - Legacy® Series integrated positioning systems
  - Spectra III™, Spectra Mini, Spectra Mini IP, Esprit®, ExSite®, and PS20 scanners, including when used in continuous motion applications.
  - Esprit Ti and TI2500 Series thermal imaging products
  - Esprit and WW5700 Series window wiper (excluding wiper blades).
  - CM6700/CM6800/CM9700 Series matrix
  - Digital Light Processing (DLP®) displays (except lamp and color wheel). The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
  - Intelli-M® eIDC controllers
- One year:
  - Video cassette recorders (VCRs), except video heads. Video heads will be covered for a period of six months.
- Six months:
  - All pan and tilts, scanners, or preset lenses used in continuous motion applications (preset scan, tour, and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to a Pelco designated location. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental, or consequential damages (including loss of use, loss of profit, and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, sales order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product that does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

To expedite parts returned for repair or credit, please call Pelco at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair) and designated return location.

All merchandise returned for credit may be subject to a 20 percent restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid.

12-23-08

⊠Green   The materials used in the manufacture of this document and its components are compliant to the requirements of Directive 2002/95/EC.

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

REVISION HISTORY

Manual #	Date	Comments
C2946M	11/07	Original version.
C2936M-A	1/08	Revised model descriptions and setup menu.
C2946M-B	3/08	Corrected electronic shutter range specification.
C2946M-C	4/08	Added Important Safeguards and power connection information for model C10CH-7X.
C2946M-D	6/08	Revised power requirements for model C10CH-7X.
C2946M-E	1/09	Revised instructions for camera setup. Updated signal-to-noise ratio specification.

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